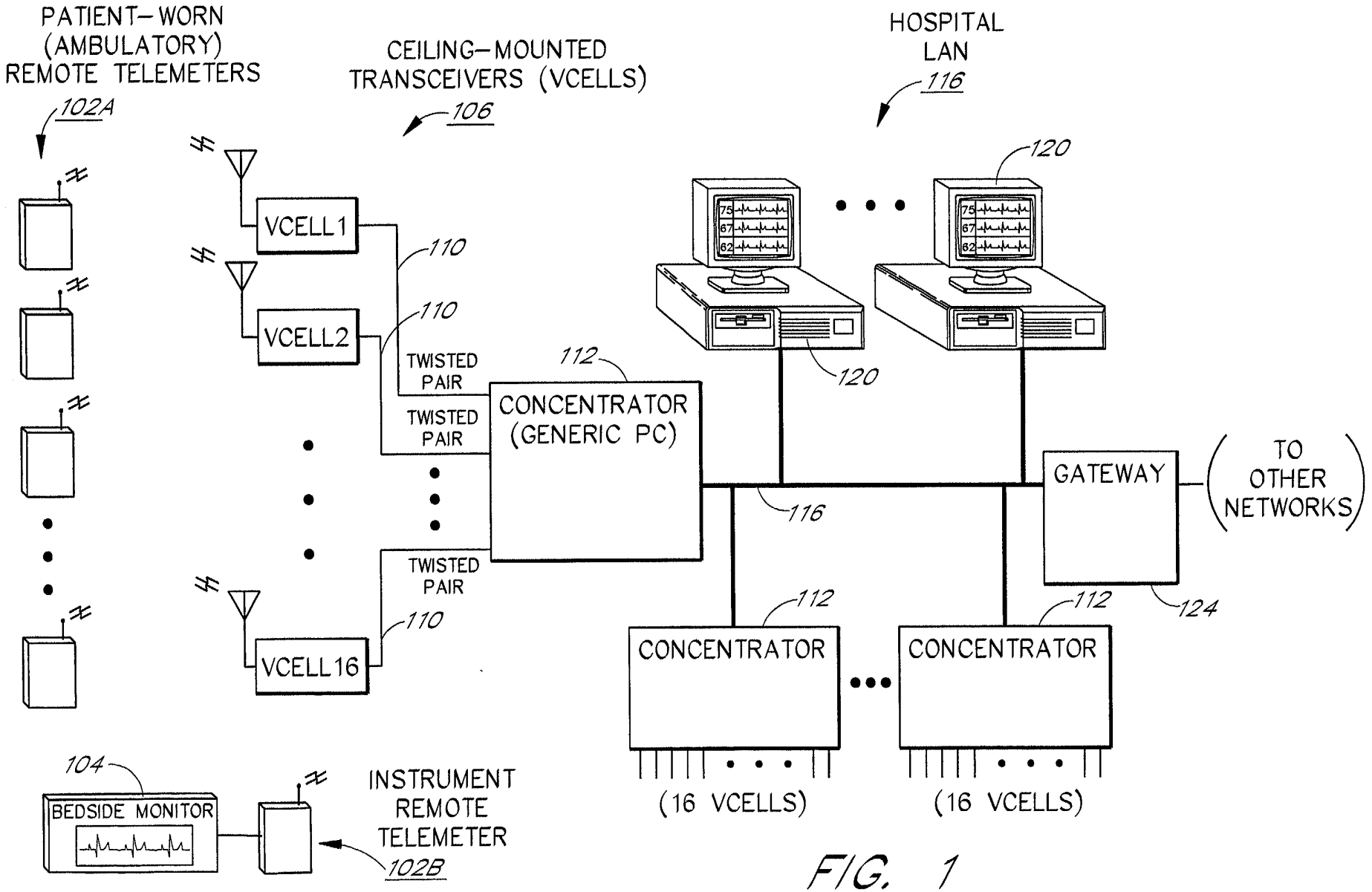


FIG. 1

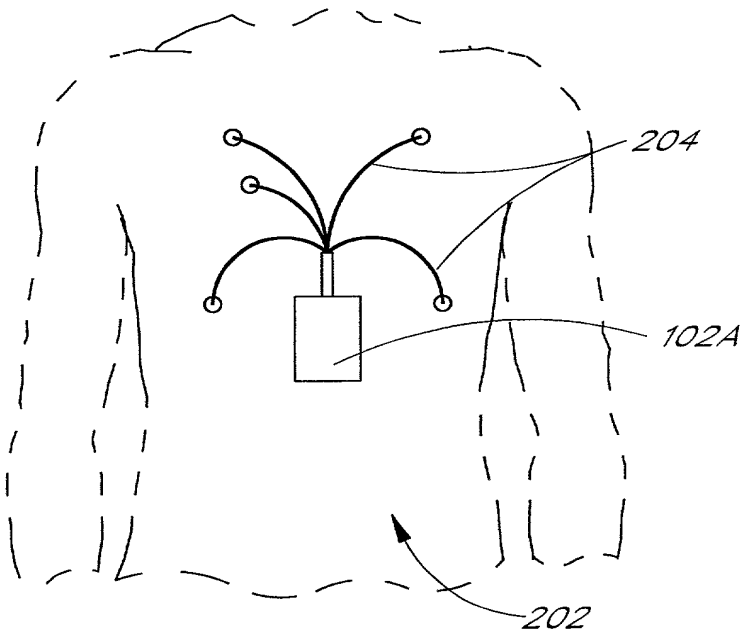


FIG. 2

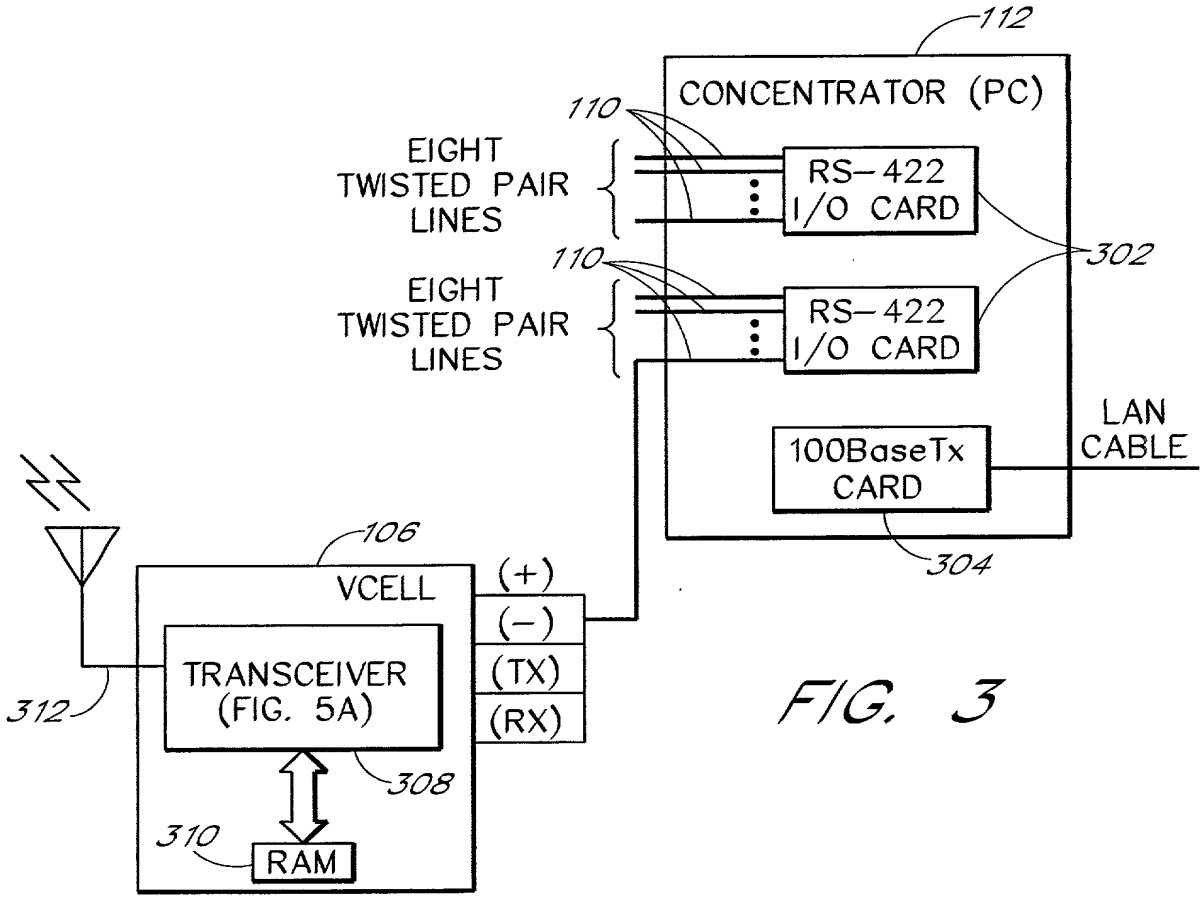

112
CONCENTRATOR (PC)
110
EIGHT TWISTED PAIR LINES
RS-422 I/O CARD
302
110
EIGHT TWISTED PAIR LINES
RS-422 I/O CARD
LAN CABLE
100BaseTx CARD
304
106
VCELL
(+)
(-)
(TX)
(RX)
TRANSCEIVER (FIG. 5A)
312
308
310
RAM

FIG. 3

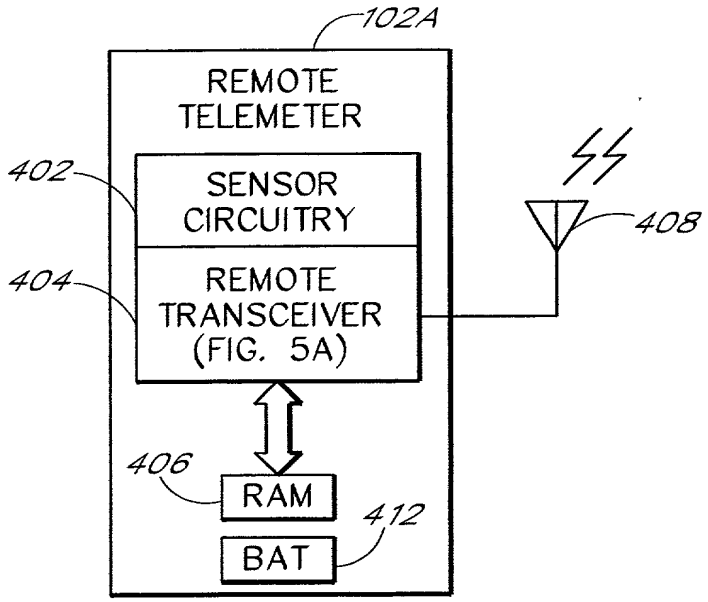

102A
REMOTE TELEMETER
402
SENSOR CIRCUITRY
404
REMOTE TRANSCEIVER (FIG. 5A)
408
406
RAM
412
BAT

FIG. 4

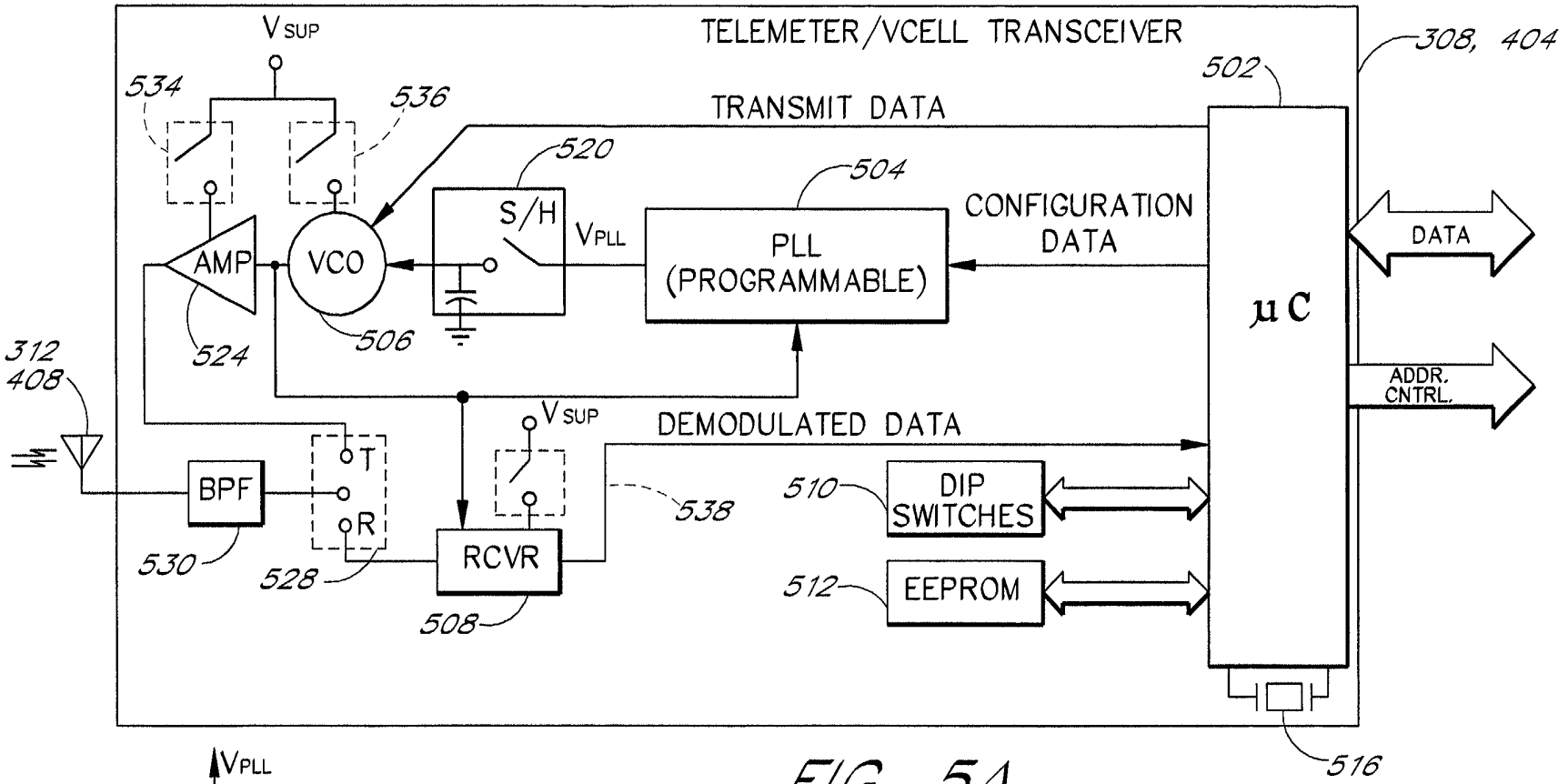


FIG. 5A

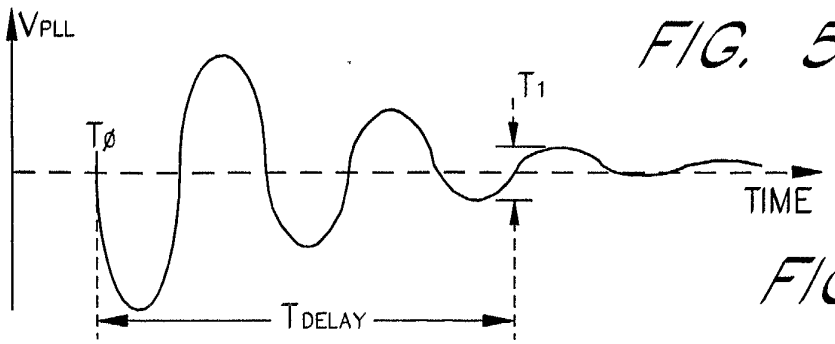


FIG. 5B

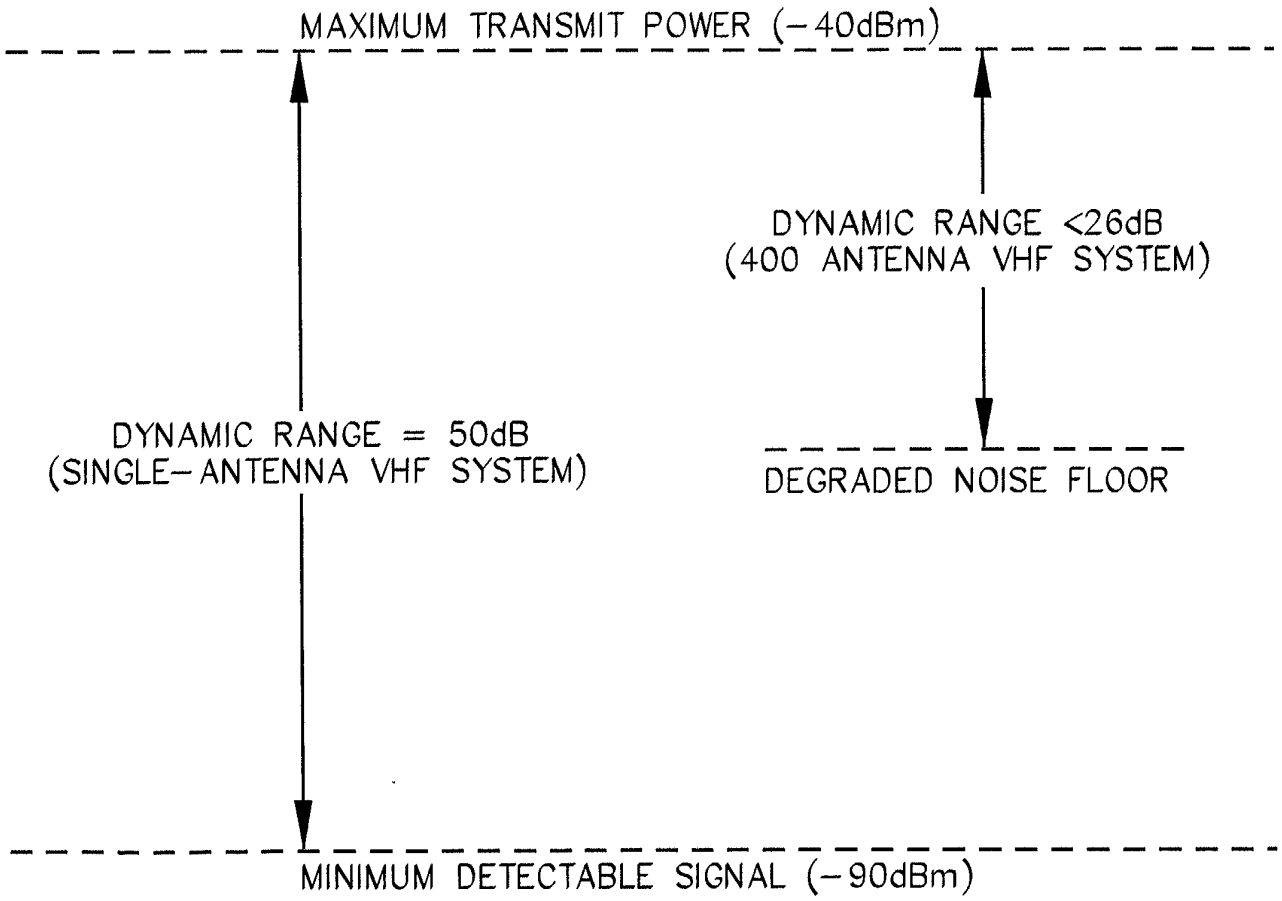


FIG. 6

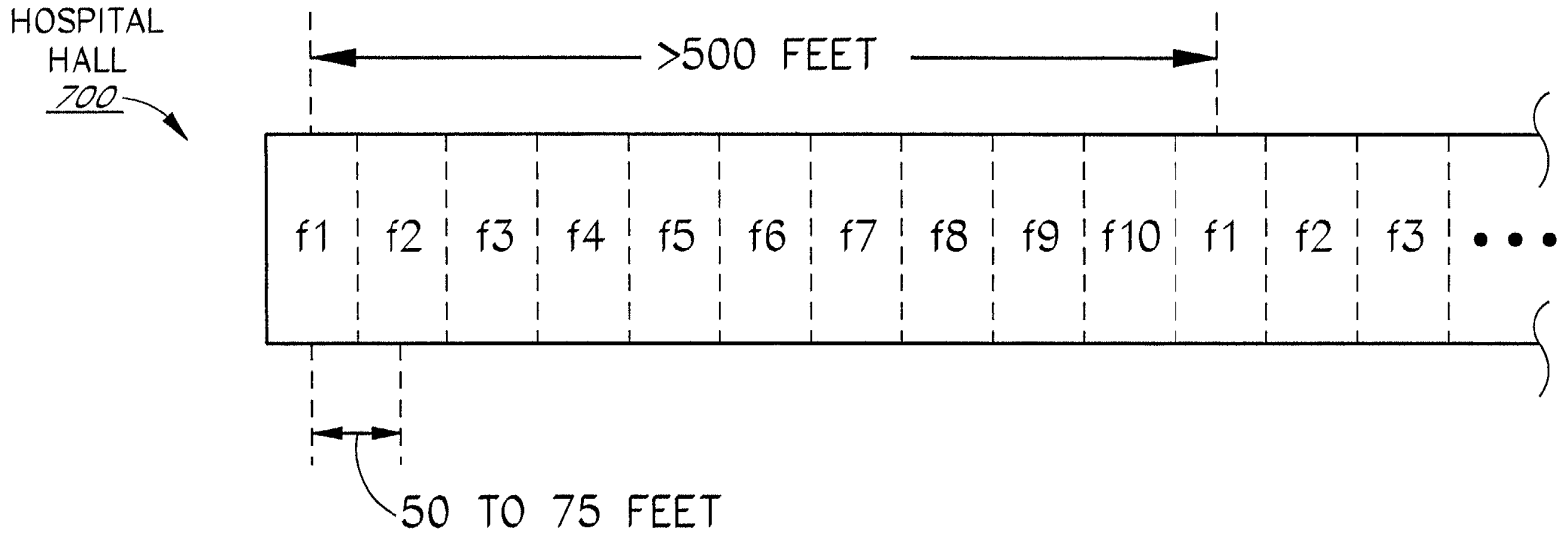

HOSPITAL
HALL
700
>500 FEET
f1
f2
f3
f4
f5
f6
f7
f8
f9
f10
f1
f2
f3
50 TO 75 FEET

FIG. 7

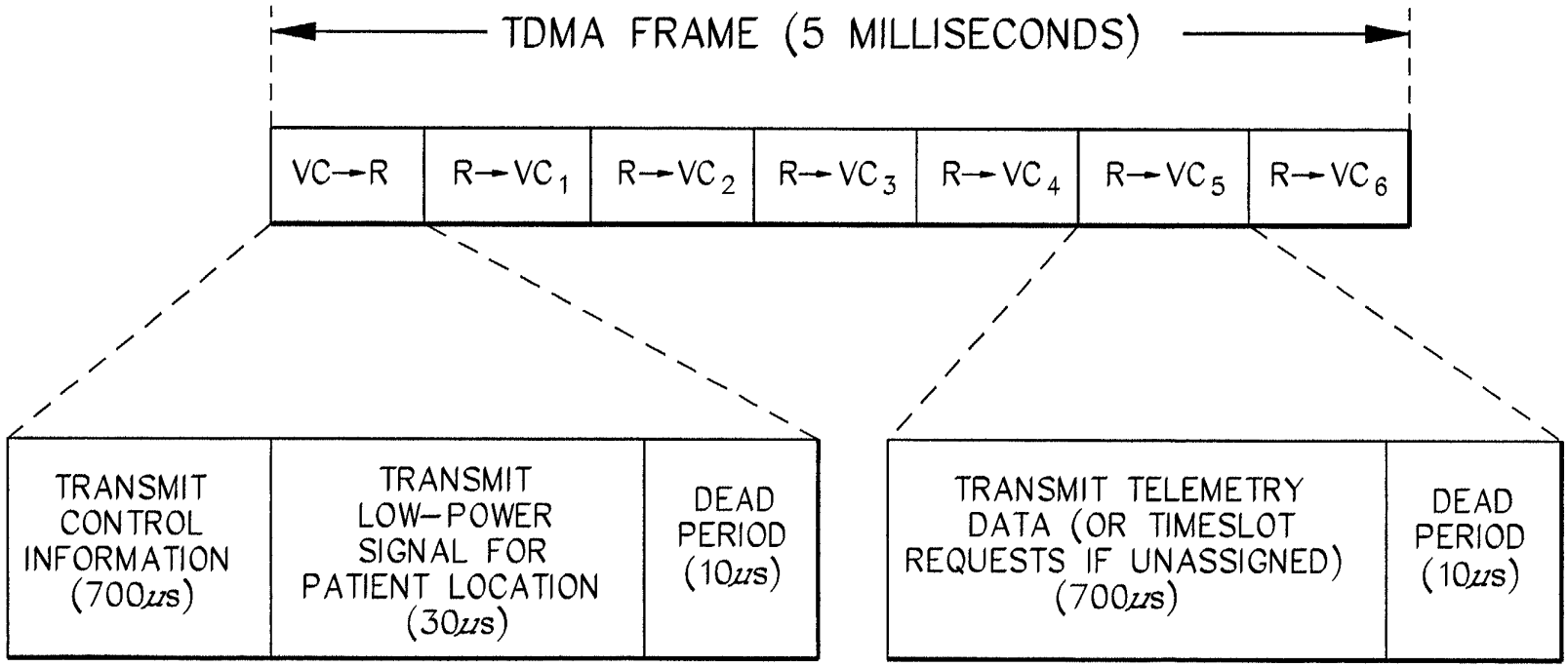


FIG. 8

LEGEND

VC = VCELL

R = REMOTE TELEMETER

TIMESLOT STATUS TABLE
900

	SLOT 1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6
ASSIGNED	✓	✓		✓	✓	
FRAMES SINCE LAST PACKET	0	0	(NA)	3	0	(NA)

FIG. 9

VCELL CATALOG
1100

	RATING	CONNECTED TO	LOW-PWR. SIGNAL STRENGTH
VCELL1 (f1)	7		1
VCELL2 (f2)	8	✓	9
VCELL3 (f3)	8		6
VCELL4 (f4)	8	✓	6
VCELL5 (f5)	6		1
VCELL6 (f6)	2		0
VCELL7 (f7)	0		0
VCELL8 (f8)	0		0
VCELL9 (f9)	3		0
VCELL10 (f10)	5		1

FIG. 11

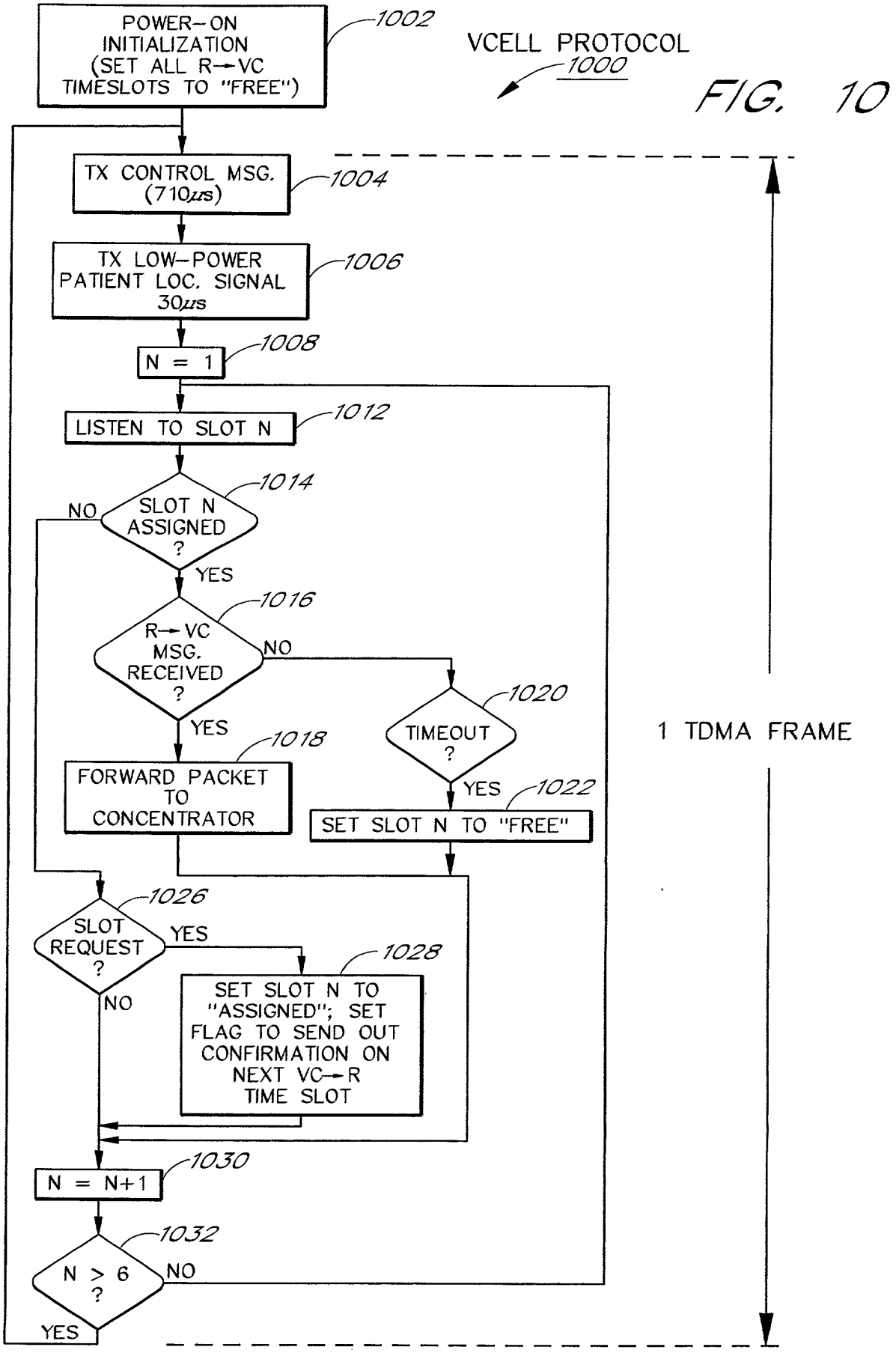

POWER-ON INITIALIZATION (SET ALL R→VC TIMESLOTS TO "FREE")
1002
VCELL PROTOCOL
1000
TX CONTROL MSG. (710μs)
1004
TX LOW-POWER PATIENT LOC. SIGNAL 30μs
1006
N = 1
1008
LISTEN TO SLOT N
1012
SLOT N ASSIGNED ?
1014
NO
YES
R→VC MSG. RECEIVED ?
1016
NO
YES
TIMEOUT ?
1020
YES
FORWARD PACKET TO CONCENTRATOR
1018
SET SLOT N TO "FREE"
1022
SLOT REQUEST ?
1026
YES
NO
SET SLOT N TO "ASSIGNED"; SET FLAG TO SEND OUT CONFIRMATION ON NEXT VC→R TIME SLOT
1028
N = N+1
1030
N > 6 ?
1032
NO
YES
1 TDMA FRAME

FIG. 10

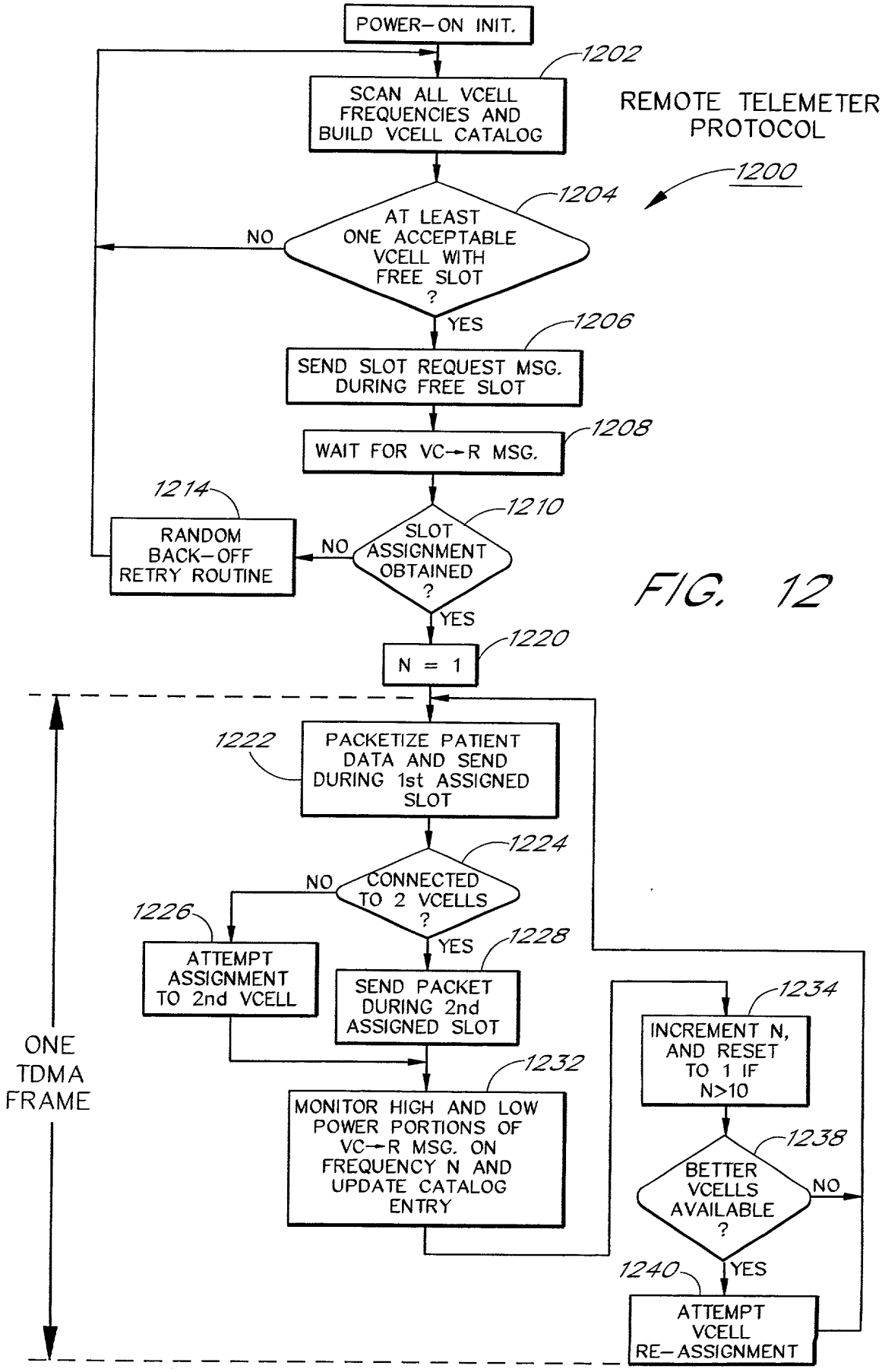
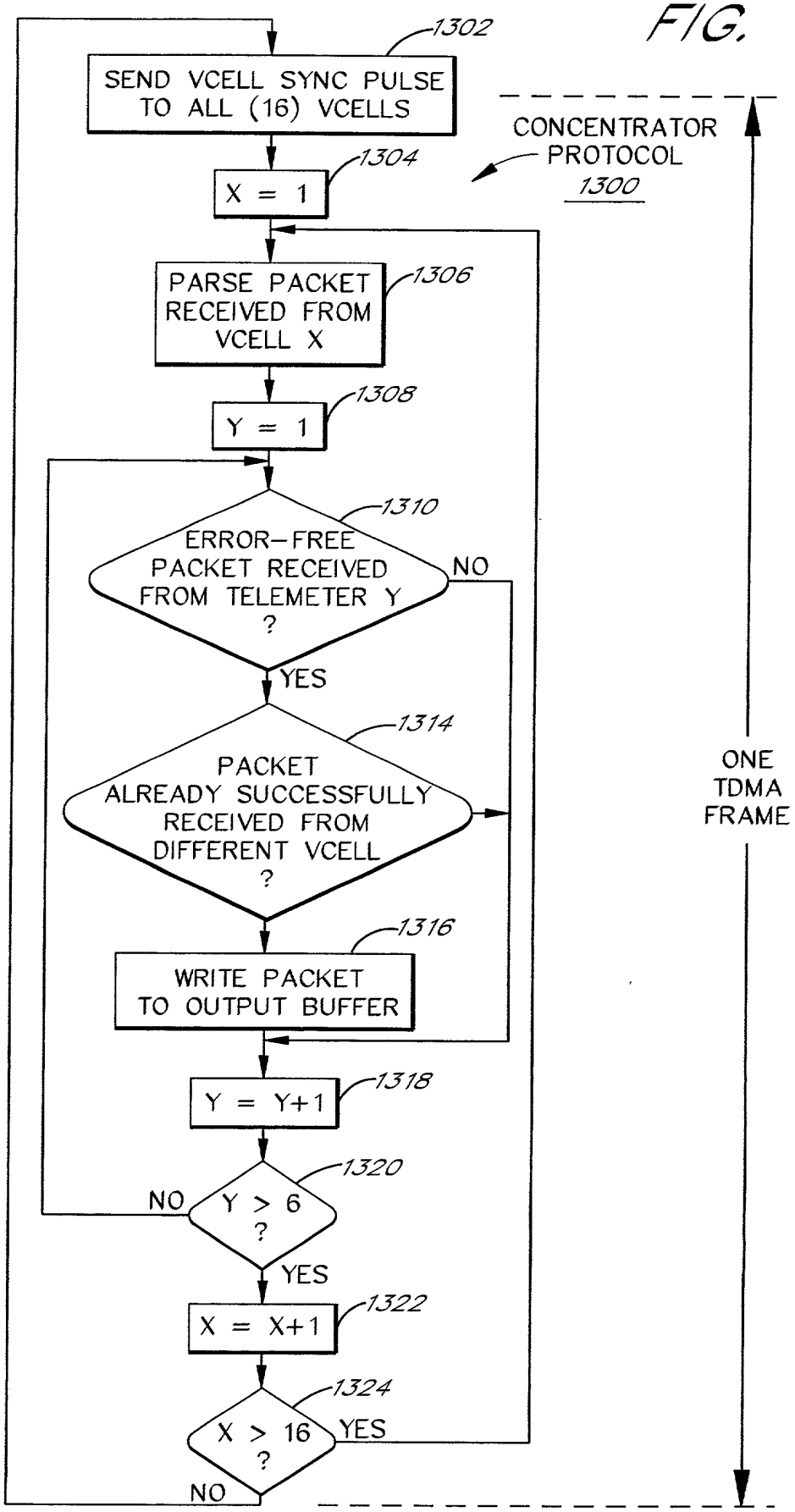

POWER-ON INIT.
1202
SCAN ALL VCELL FREQUENCIES AND BUILD VCELL CATALOG
REMOTE TELEMETER PROTOCOL
1200
1204
AT LEAST ONE ACCEPTABLE VCELL WITH FREE SLOT ?
NO
YES
1206
SEND SLOT REQUEST MSG. DURING FREE SLOT
1208
WAIT FOR VC→R MSG.
1214
RANDOM BACK-OFF RETRY ROUTINE
1210
SLOT ASSIGNMENT OBTAINED ?
NO
YES
1220
N = 1
1222
PACKETIZE PATIENT DATA AND SEND DURING 1st ASSIGNED SLOT
1224
CONNECTED TO 2 VCELLS ?
NO
YES
1226
ATTEMPT ASSIGNMENT TO 2nd VCELL
1228
SEND PACKET DURING 2nd ASSIGNED SLOT
1232
MONITOR HIGH AND LOW POWER PORTIONS OF VC→R MSG. ON FREQUENCY N AND UPDATE CATALOG ENTRY
1234
INCREMENT N, AND RESET TO 1 IF N>10
1238
BETTER VCELLS AVAILABLE ?
NO
YES
1240
ATTEMPT VCELL RE-ASSIGNMENT
ONE TDMA FRAME

FIG. 12

FIG. 13


1302
SEND VCELL SYNC PULSE TO ALL (16) VCELLS
CONCENTRATOR PROTOCOL
1300
1304
X = 1
1306
PARSE PACKET RECEIVED FROM VCELL X
1308
Y = 1
1310
ERROR-FREE PACKET RECEIVED FROM TELEMETER Y ?
NO
YES
1314
PACKET ALREADY SUCCESSFULLY RECEIVED FROM DIFFERENT VCELL ?
1316
WRITE PACKET TO OUTPUT BUFFER
1318
Y = Y+1
1320
Y > 6 ?
NO
YES
1322
X = X+1
1324
X > 16 ?
YES
NO
ONE TDMA FRAME